

Reply Under 37 C.F.R. § 1.116
Expedited Procedure
Technology Center 3700

Application No.: 10/586,866
Art Unit: 3753

REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars.

1. Rejection of claims 1-4 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent no. 4,287,912 (Hewett)

Reconsideration of this rejection is respectfully requested on the basis that the *Hewett* patent fails to disclose each and every recited element of pending claims 1 and 3. The remaining claims 2 and 4 depend from either claim 1 or 3, and are therefore patentable as containing all of the recited elements of claims 1 or 3, as well as for their respective recited features.

By way of review, the embodiments of pending claims 1 and 3 require a flow control valve, the recited structure of which allows flow in two directions. In particular, with respect to claim 1, the flow control valve includes a cylindrical casing having therein a meter-out inlet, a valve chamber, a rod chamber for housing an adjusting rod to be axially movable, and a meter-out outlet, all communicatively connected in the recited order.

With respect to claim 3, the cylindrical casing has therein a meter-in inlet, a rod chamber for housing an adjusting rod to be axially movable, a throttle valve seat arranged substantially concentrically with the rod chamber, and a meter-in outlet, all communicatively connected in the recited order.

Claim 1 further requires the throttle valve seat to be provided on a leading end portion of the adjusting rod.

In each of claims 1 and 3, a check member is inserted in a valve chamber and is urged towards the throttle valve seat by an elastic member. Additionally, the recited structure of claims 1 and 3 requires the throttle valve seat to be positioned on the meter-out outlet side or the meter-in outlet side of the check member, which is inserted into the valve chamber.

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In contrast to the embodiments of claims 1 and 3, the *Hewett* patent discloses a monoflow ball valve, which only allows flow in a first direction and seals against backflow (abstract; col. 1, lines 36-42; col. 2, lines 20-24). Thus, the *Hewett* patent fails to disclose a valve structure that allows flow in two directions, as is required by the structure recited in claims 1 and 3.

Additionally, the *Hewett* patent fails to disclose at least a throttle valve seat positioned on the meter-out outlet side or the meter-in outlet side of the check member, which is inserted into the valve chamber, as is required by pending claims 1 and 3.

The structure of the monoflow ball valve 10 of the *Hewett* patent includes a valve body 11 having an internal flow-through passage 12 concentric with and extending along the longitudinal axis 13 of the body. The valve body 11 is arranged for the flow of fluids from an inlet end generally designated by numeral 14 to an outlet end generally designated by numeral 15. The valve body 11 contains a ball 16 which cooperates with the inside of the valve body to permit fluid flow through the inlet end via the passage and blocks flow in the reverse direction (col. 2, lines 12-26).

The valve body 11 can be constructed in two portions 22, 21 that are telescopically connected (col. 2, lines 27-35). Specifically, the body portion 21 is provided with an internal tapered passage 12a having threads 24 thereon for mating with external threads 25 on the body portion 22 (col. 2, lines 53-58). The taper causes the pipe section to become compressed as the body portions are threaded together (col. 2, lines 63-64). The portion 22 includes a chamfered shoulder 23 that engages and limits movement of the ball 16 (which is biased toward the shoulder 23 via spring 17) until a sufficient back pressure develops to force the ball 16 into the passage 12b (col. 2, lines 35-40). It appears that there will be some limited movement of the ball 16 when the valve body portions 22, 21 are screwed together or apart, due to the engagement between the ball 16 and the chamfered shoulder 23.

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There is no disclosure in the *Hewett* patent, however, of a throttle valve seat or an adjustable throttle gap formed between the check member and a throttle valve seat, as required by pending claims 1 and 3. In particular, there is no disclosure of throttling the fluid in the monoflow ball valve 10, so there can be no throttle valve seat in the monoflow ball valve 10 of the *Hewett* patent.

The Office action, on page 2, appears to identify the rim 48 of the inlet coupling 41 as a throttle valve seat. Even if the rim 48 is considered to be a throttle valve seat, the rim 48 is positioned on an inlet side of the check ball 16, as can be seen by the flow arrows in Figs. 1 and 3. Since the *Hewett* patent discloses a monoflow valve, the rim 48 is always positioned on an inlet side of the check ball 16.

This configuration is in contrast to the structures recited in pending claims 1 and 3, which, as discussed above, each require a throttle valve seat positioned on the meter-out *outlet side* or the meter-in *outlet side* of the check member, which is inserted into the valve chamber.

Thus, the *Hewett* patent fails to disclose at least a throttle valve seat positioned on the meter-out outlet side or the meter-in outlet side of the check member, which is inserted into the valve chamber, as is required by pending claims 1 and 3.

Further, even if the structure of the outlet end section 39 of body portion 21, which surface surrounds the spring 17 (Figs. 3 and 4), is considered to be a throttle valve seat, the ball 16 is urged *away* from this surface by the spring 17, which is in direct contrast to pending claims 1 and 3, which require the check member to be urged *toward* the throttle valve seat.

Accordingly, for the reasons discussed above, the *Hewett* patent fails to disclose at least a throttle valve seat provided on a leading end of an adjusting rod, the check member urged towards the throttle valve seat by an elastic member, and an adjustable throttle gap formed between the check member and the throttle valve seat, all as required by pending claim 1, at least a throttle valve seat, the check member

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urged towards the throttle valve seat by an elastic member, and an adjustable throttle gap formed between the check member and the throttle valve seat, all as required by pending claim 3, or at least a throttle valve seat positioned on the meter-out outlet side or the meter-in outlet side of the check member, which is inserted into the valve chamber, as is required by pending claims 1 and 3. Therefore, withdrawal of this rejection is respectfully requested.

As mentioned above, applicants submit that independent claims 1 and 3 are patentable and therefore, claims 2 and 4, which respectively depend from claims 1 and 3, are also considered to be patentable as containing all of the elements of claim 1 or 3, as well as for their respective recited features.

2. Rejection of claims 6 and 7 under 35 U.S.C. § 102(b) as being anticipated by Japanese publication JP 39-18634 or JP 11347869

Reconsideration of this rejection is respectfully requested on the basis that the '634 publication and the '869 publication fail to disclose each and every recited element of claim 6. The remaining claim 7 depends from claim 6, and is therefore patentable as containing all of the recited elements of claim 6, as well as for its respective recited features.

By way of review, the embodiment of pending claim 6 requires *inter alia* a cylindrical casing attached to a mounting hole and a leading end portion of the cylindrical casing is brought into contact with or made to approach a bottom wall of the mounting hole to partition the actuation port and the pressure port.

Turning first to the '634 publication, there is no disclosure of a cylindrical casing attached to a mounting hole and a leading end portion of the cylindrical casing is brought into contact with or made to approach a bottom wall of the mounting hole to partition the actuation port and the pressure port, as is required by pending claim 6.

As shown in Figs. 1-3 of the '634 publication, an unlabeled sealing member is mounted to an outer periphery of a main body 4, 4', which apparently corresponds to

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the cylindrical casing recited in claim 6. The sealing member provides a partition between the two passages 6, 6' and 7, 7' at the outer periphery of the main body 4, 4'. As shown in Figs. 1-3, a gap is provided at an upper side of an upper surface of a spring guide 14, 14', which is screwed to an upper portion of the main body 4, 4', such that liquid can freely pass through the gap.

The upper surface of the spring guide 14, 14' forms the leading end portion of the main body 4, 4', and once the main body 4, 4' is assembled, the leading end portion of the main body 4, 4' does not contact or approach the bottom wall of the mounting hole in order to partition the actuation port and the pressure port, but instead, the partitioning is achieved via the unlabelled sealing element.

Further, since the two passages 6, 6' and 7, 7' are already hermetically partitioned, there is no suggestion to use the leading end portion of the main body 4, 4' to partition these passages.

Further still, even of the leading end portion of the main body 4, 4' was made to contact or approach a bottom wall of a mounting hole, since the passages 6, 6' and 7, 7' are selectively connected through the center of the main body 4, 4', the use of the leading end portion of the main body 4, 4' to approach or contact a bottom wall of a mounting hole will not partition the passages 6, 6' and 7, 7'.

Accordingly, the '634 publication fails to disclose a cylindrical casing attached to a mounting hole and a leading end portion of the cylindrical casing is brought into contact with or made to approach a bottom wall of the mounting hole to partition the actuation port and the pressure port, as is required by pending claim 6, and withdrawal of this rejection is respectfully requested.

Similarly, there is no disclosure in the '869 publication of a cylindrical casing attached to a mounting hole and a leading end portion of the cylindrical casing is brought into contact with or made to approach a bottom wall of the mounting hole to partition the actuation port and the pressure port, as is required by pending claim 6.

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In particular, there is no element of the '869 publication that appears to correspond to the cylindrical casing recited in pending claim 6, and thus, there is no leading end portion of the cylindrical casing to be brought into contact with or made to approach a bottom wall of the mounting hole to partition the actuation port and the pressure port, as is required by pending claim 6. Additionally, the '869 publication does not disclose partitioning the actuation port and the pressure port, as is required by pending claim 6.

Accordingly, the '869 publication fails to disclose a cylindrical casing attached to a mounting hole and a leading end portion of the cylindrical casing is brought into contact with or made to approach a bottom wall of the mounting hole to partition the actuation port and the pressure port, as is required by pending claim 6, and withdrawal of this rejection is respectfully requested.

As mentioned above, applicants submit that independent claim 6 is patentable and therefore, claim 7, which depends from claim 6, is also considered to be patentable as containing all of the elements of claim 6, as well as for its respective recited features.

5. Rejection of claim 5 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent no. 4,287,912 (Hewett) in view of Japanese publication JP 39-18634 or JP 11347869

Reconsideration of this rejection is respectfully requested on the basis that the rejection fails to establish a *prima facie* case of obviousness with respect to claims 1 and 3, from which claim 5 depends.

The shortcomings of the *Hewett* patent with respect to pending claims 1 and 3 are described above in detail.

Neither of the '634 publication and the '869 publication disclose the structure of an adjustable throttle gap formed between the check member and the throttle valve

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seat, and the throttle valve seat formed at a meter-out outlet side or a meter-in outlet side of a check member, as is required by pending claims 1 and 3.

Accordingly, since none of the *Hewett* patent and the '634 publication and the '869 publication disclose an adjustable throttle gap formed between the check member and the throttle valve seat, and the throttle valve seat formed at a meter-out outlet side or a meter-in outlet side of a check member, as is required by pending claims 1 and 3, the proposed combination of the *Hewett* patent and the '634 publication or the '869 publication fails to disclose this feature.

Therefore, since the proposed combination of the *Hewett* patent and the '634 publication or the '869 publication fails to disclose an adjustable throttle gap formed between the check member and the throttle valve seat, and the throttle valve seat formed at a meter-out outlet side or a meter-in outlet side of a check member as is required by pending claims 1 and 3, a *prima facie* case of obviousness cannot be established with respect to claims 1 and 3, from which claim 5 depends. Accordingly, withdrawal of this rejection is respectfully requested.

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6. Conclusion

In view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that every pending claim in the present application be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the applicants' attorney, the examiner is invited to contact the undersigned at the numbers shown below.

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